

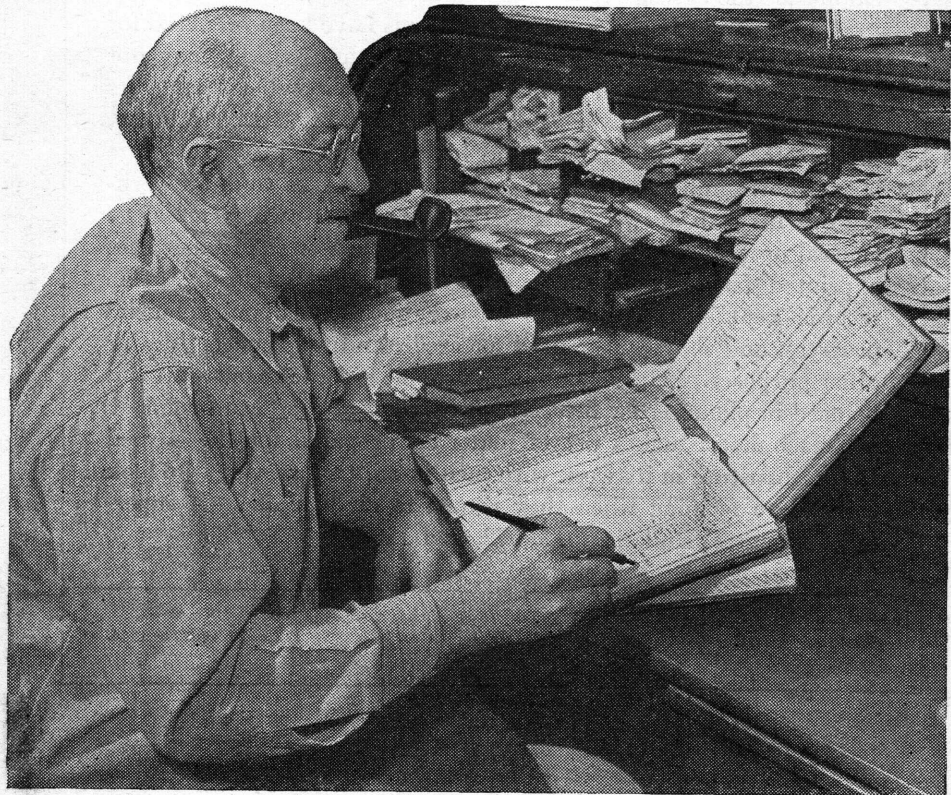
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# USEFUL RECORDS for FAMILY FARMS

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U. S. DEPARTMENT OF AGRICULTURE



Farmers' Bulletin No. 1962

U. S. DEPARTMENT OF AGRICULTURE

**M**OST FARMERS keep some records of their business operations. Some keep only a collection of sales slips and a few notes in a pocket notebook. Even on farms where more records are kept they are usually less formal than the bookkeeping in other types of business. Farmers have fewer transactions with other people that require recording. But a farmer today has more commercial contacts than in former years, and recent income-tax laws require income reports from nearly all farmers. These facts emphasize the desirability of keeping more adequate farm records.

Many account books and record systems have been prepared for farmers. Most of these are serviceable, although they may not fit all of the individual farmer's needs. This bulletin suggests that the farmer record the general facts about his farm and home, his livestock and equipment, and his production program. The forms shown indicate the kind of thinking he needs to do in working out his own answers to questions about his own farm. The general procedure suggested is applicable whether the farmer uses a printed farm-account book or prepares his own forms. The records kept should serve to answer questions about financial progress, and they can be used for credit and tax reports and for other purposes. They should also provide recorded facts that can be used in planning for future improvement of the farm business.

This bulletin makes use of materials prepared for the Armed Forces Institute in its work with men in military service who look forward to farming when they return to civilian life. It supersedes Farmers' Bulletins 511, 572, and 1182.

# USEFUL RECORDS FOR FAMILY FARMS

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**I**N DAY-TO-DAY operations and in planning the production program for the seasons ahead, farmers need to know the answers to a great many questions on which their own past experience is the best guide. Possibilities for changing farming practices to increase the farm income need to be analyzed in terms of previous experience. Now and then new circumstances call for decisions that will greatly affect the income from the farm. Some successful men work such decisions out in their heads. Their memories supply the facts they need. On a very small farm the farmer's memory may be enough, but on most successful farms the operators need written records as a basis for planning their operations.

It is told that a farmer whose barn was on fire ran into the building and came out with a door. He explained that all his records for 30 years of farming were kept on that door. Fortunately, there are more convenient and more systematic ways of keeping records of the farm business.

Some people remember things better than others do, but even they would do well to relieve their minds of the burden of details that may be set down on paper. What to write down and how to arrange the records for later use are matters of personal judgment. A bound book is a handy place to keep written facts. Two or more kinds of books may be desirable.

## WHY RECORDS NEED TO BE KEPT

Now that income-tax returns are made by all persons having an income above \$500, farmers are much interested in the bookkeeping that is needed in order to figure the amount of their taxes. No bookkeeping system especially designed for that purpose is required and such a system might not be convenient for ordinary purposes. For figuring his tax, the records that a farmer keeps for guidance in running his farm business will supply the information he needs. Few farmers need to hire an expert when making out income-tax returns. Representatives of the Bureau of Internal Revenue may usually be consulted about points that the farmer may want to have cleared up.

## KINDS OF RECORDS TO KEEP

Farm records considered in this bulletin include written statements and numerical scores of any kind that recall the circumstances of any action related to the farmer or to any of his property.

Many important papers result from transactions with other people—including sales tickets, receipts for produce delivered, and other descriptive evidences of transactions. Bank accounts serve primarily as means of keeping and transmitting money safely. The periodical bank statements and the cancelled checks cover a large part of the farmer's financial transactions, but to be most useful they must be summarized and interpreted. Many forms are available for scoring details of current interest, such as the egg-production scores that poultrymen tack up at the door of the pen, breeding records of the cows, and milk sheets. More informal are the marks on the corncrib showing such things as the loads of corn put in, date of first load, and loads before November 1.

All of these miscellaneous records need to be summarized and interpreted for use in future planning of farm business. If these summaries are adequate, the sales slips, production scores, milk sheets, and other temporary papers may be destroyed, unless a few—like cancelled checks, or receipted bills—are kept for a time as proof of payments made.

Summaries are as varied as the needs of the farmers who make them, and they properly change in form and content as a farmer's interest shifts from one set of problems to another.

Farm-management specialists have prepared sets of forms that are helpful to many farmers because they were designed to cover the needs expressed by farmers. Most of them are based upon the best suggestions of farmer users. The farm-account book now distributed by the State agricultural extension service in each State is the book that has seemed adequate to most farmers who wanted a prepared form. It is hardly to be expected that one book, however well planned, can serve all persons who wish to keep farm accounts.

One book can be designed to cover everything a man may wish to put in writing, but experience shows that after a practice period many farmers branch out into a group of books, each covering one part of the farm business or one kind of record, all of them adding up to the information needed. Two, three, or even more books of record mean no more work than one that holds the same information.

Printed books save writing if a farmer can adapt his record keeping to fit the printed forms. This can often be done with only slight variations. Unless the same type of book is available year after year, comparisons with work accomplished in a previous year may be hard to make.

Moreover, many record keepers feel the need of more than one arrangement of preliminary figures, so that time spent making notes in a pocket notebook is not time lost, whether the notes concern receipts, expenses, or ideas that sometimes come while operating a machine in the field. Some people like a diary or journal in which events are written up. Good diaries serve other interests besides the business.

In short, a wide variety of records can be kept, and each can be summarized in accordance with sound accounting practice. A farm



operator can take short cuts because he is accounting to himself for his own actions. Accounting principles apply everywhere, year after year, but the kinds of transactions are different.

### PERSONAL AND DOCUMENTARY RECORDS

Records of some transactions must be available for self-protection. To make sure that some of these are not lost, local governments provide for recording deeds of sale of property, deeds of trust, easements, rights of way, leases, wills, and birth certificates. Usually these are at the courthouses or other safe places. Other documentary evidence like war savings bonds, insurance policies, stocks and bonds can be placed in bank vaults by arrangement with the banks, or a safe-deposit box may be rented for a fee. Failure to produce these documents is very troublesome, although laws protect holders from complete loss of value in case of fire or theft.

Records of business transactions with other people, especially the credit transactions, are also important. A seller wants to have from the buyer a written receipt for goods delivered, and the buyer wants a receipt for the money he is paying for those goods. If there is any possibility that the seller might be selling something which he does not own, the buyer will want a bill of sale. Cancelled bank checks are good evidence of payment of money to another. Noting on the check the object for which it was drawn makes the check even more serviceable as a record.

Besides the documents of transactions with other people, other statements of fact serve a farmer as a basis for negotiations, or help him to prove statements he makes about his business affairs. These include filling out a statement when credit is to be obtained from a bank, the pedigrees of purebred stock, and details of many other kinds. The essential facts about these matters are conveniently recorded in a careful farmer's book of account, or kept with them. For many purposes it is useful to keep the strictly personal affairs separate from the farm business but without dropping the personal affairs out of the scheme of a farmer's financial records.

### BUSINESS RECORDS

All the business records a farmer ever may want to keep fall into three classes. (1) *A property list, or inventory,*<sup>1</sup> describes the property on a stated date. The differences between successive inventories constitute important information. (2) *Records of receipts and expenses*, including capital outlays, show besides the amount of money involved, what products were sold and what the expenses were. These records and the property lists, or inventories, are closely related; the true picture of the year's business is available only when both are worked together. (3) *The production, performance, and other incidental records* that explain the facts back of the sales of the finished product fit in with inventories and financial transactions and are necessary for working out the reasons for changes in yield per acre, production of milk per cow, gain of hogs per hundred pounds of feed,

<sup>1</sup> The term "inventory" is often applied to the list of physical property used in the farm business. In income-tax work "inventory" is applied to that part of the property list that represents stock in trade, goods to be finished by processing, and supplies to be used up in production, in contrast with the durable equipment, land, and buildings, and work stock, and certain classes of livestock.

and other figures that farmers talk about and use when planning changes in the farm business. By rearrangement of these three kinds of records, preferably in accordance with methods planned in advance, costs can be worked out and a farmer can find out what practices are paying best.

## A FLEXIBLE SET OF BOOKS FOR A FARMER

A farmer on a family farm needs a great deal of accurate information about his own ways of doing things in order to plan and operate a smooth-running and profitable business.

When the business as a whole is running smoothly the parts are in reasonable adjustment. Records help to understand how the parts of the business are functioning and how well they are adjusted to each other. The farm business, like the family car or the tractor, responds to regular servicing of the parts that work together, and adequate records help to understand how these parts fit together.

A farm business is a custom-made job—the parts are not interchangeable, nor can they be bought from a central supply house. Yet the farm business is built according to one of a number of designs, each standardized enough to be called a type of farming. Within each type there is about as much difference in resources and management as there is between the types.

It is not possible to anticipate the special needs of each reader's business. For that reason records are discussed in the simplest possible terms, with the expectation that the reader will supply his own familiar language to the job of finding answers to the questions he has been asking.

The record plan in bare outline is this:

The business involves using land, labor, and equipment for producing farm goods for sale and for home use. (Some farmers might prefer to say that *they* are the producers, making the process personal instead of impersonal "business".)

The make-up of the farm resources and the resulting products are constantly changing. Their value is changing. The productive process results in new goods, and in exhaustion of equipment and supplies. The records show these changes.

The services of the family labor force are paid for out of the value remaining after other claims have been met. The amount that they receive is computed from a summary of the records.

The operator and members of his family sometimes get more for their share than the hired workers. But although the operator carries more responsibility and risk than the hired workers, he takes less return if his remainder is small.

The classes of business records are interdependent (see p. 3). The inventories and the financial records need to be studied together and both are needed along with performance records in analyzing possible improvements in the dairy enterprise or some other line of production. A new business would start with the financial record of expenses for equipment and services, after which the property list or beginning inventory would be written up and performance records provided for. But most farms are going concerns when the records are started.

## PROPERTY LIST OR INVENTORY

The property list, or inventory, provides a basing point for measuring changes that take place in the farm business over a period of time. The land and buildings and every article on the farm must be described as to its present condition and its value, as a starting point or base against which changes are to be measured.

### MAKING THE FIRST LIST

The first formal list may be made most conveniently by two persons: the operator to see, describe, and value the pieces of property; the other to write in a book of record. This book may be one of the inexpensive ruled composition books used in schools. Everything in each building, or elsewhere about the farm, is described so that it may be identified at any future time. Yards and sheds are inspected for things out of place. Nothing is too unimportant for listing at this first going over. It is seldom wise to try to sort items at this first listing, as a complete rearrangement is to be made to get all like things into groups, as shown below.

This first listing in complete detail might take a day. Lists made later can be checked in much less time by the operator working alone. Then he notes the things gone from the next earlier list, the equipment acquired since the last list, and, of course, the numbers of livestock and the quantities of produce and supplies now on hand. Inventory taking is best done on or about January 1.

It is worth while at this time, and all through the record-keeping process, to bear in mind the need for proper listing, classification, and valuation. For example, a 10-year-old binder worth \$60 and a 2-year-old binder worth \$220 are together worth \$280, but they should be kept distinct in the record—not set down as 2 binders worth \$280 averaging \$140 each. Similarly a load of soft corn is not worth as much as a load of sound corn.

A farmer's *assets* include the physical property that he owns, and money he has in the bank or in his pocket, and any money due him by other people for goods delivered before payment, or for money loaned on note or mortgage.

Most farmers have debts of some kind. These vary in amount from the accommodation accounts at the town stores, through bank loans and conditional sales of machinery, to the mortgage on the farm. These are claims against the farmer's assets and are called *liabilities*.

### THE NET WORTH IDEA

The *difference* between the farmer's total assets, and the farmer's liabilities is the farmer's own investment, or his *net worth*. The net worth of a renter who owns none of the real estate covers only personal property, tangible and intangible, again after subtracting the debts, if any. The amount and the nature of a change in net worth are significant information for showing financial progress. The periodical property lists show what a farmer has at the time of listing, but they do not show the results of using the property.

Ordinarily the property lists are checked and brought up to date at least once each year. Naturally, the inventory taken at the end



of the year serves also as the first inventory of the following year. In times of price stability, the value of the physical property on successive inventory dates will be about the same unless there have been decided changes in the physical assets.

### VALUATION PROBLEMS

Valuation of the inventory items on the farm give farm bookkeepers the most trouble. This is largely because every item can be valued in at least three ways. First, there is the cost of the article, reduced by wear and tear to date. This applies especially to buildings, machinery, equipment and other property that is subject to depreciation. Second, there is the market value if it were to be sold "as is" at a farm sale. Third, there is its value to the business based on its current service or replacement value. A farmer properly appraises the relative merits of his items and adopts for his new property list or inventory the value that best serves his interests. What someone else might think an item is worth means little to him, unless he expects to trade soon.

Farmers who have counted only the physical assets of the business in the property list have sometimes felt discouraged in seasons when they had actually made real progress. Even though the physical assets were worth less money, the net worth may have increased, as through the process of paying debts.

### DEPRECIATION AS PREPAID EXPENSE

Calculation of the amount of depreciation on each inventory item loses some of its terrors if it is thought of as the amount of value turned back to the owner during the year through rendering service in production. The total value put into a building (or a machine, or a horse) for use in production is given back through services year by year. No more can be taken out than has been put in.

The value of any item of depreciable property is thus the total original investment (including improvements, but not the annual repair and maintenance expense) reduced by the value turned back into production to date.

Depreciation is an item of cost in operating a business. The property is bought for future use in the business and this cost is therefore prepaid in cash or equivalent. It cannot be avoided, but the annual amount can be reduced by careful use that extends the life of the item. Two neighbors have the same depreciation amounts for a farm machine only if the investments and the conditions of use are the same. The use of round percentages of current inventory value or the use of someone else's average figures for computing depreciation saves a little time but should be tested against one's own experience.

In common language, depreciation sometimes is considered to be the difference in trading value suffered during a period of use, especially of automobiles, trucks, and tractors. Thus, a new car becomes a used car overnight and suffers a heavy "depreciation" in exchange value. Such shrinkage in value is properly taken into account on the record as a loss if the property is sold, rather than as depreciation.

### OBSOLESCENCE LIKE DEPRECIATION

Besides wear-and-tear depreciation, buildings and machinery are subject to what is called obsolescence, which is a bookkeeping item similar to but separate from depreciation. The annual amount of it is computed in the same way as depreciation—the probable loss of use-value through obsolescence is spread over several years. It applies to loss of use-value to a business when new and improved equipment makes the use of older equipment unprofitable. Obsolescence and depreciation are usually considered together and may not exceed the total amount invested in the specified equipment.

### COMPUTING DEPRECIATION

For most property items there is no better way to measure depreciation and anticipated obsolescence during the first years than to divide the total investment in the item by the number of years that the farmer expects to use it and then to reduce the inventory value by that amount each year. (See discussion of depreciation details on page 28.) The total depreciation of the farm buildings and equipment is then the sum of all of the individual depreciation bills.

Another way of estimating depreciation during an accounting period is to estimate the total service in terms of acres, or hours, or some other measure of use to be apportioned annually. This scheme is particularly good for machines used in custom work in addition to the work on the operator's own farm.

Land usually is not considered depreciable, in spite of the fact that farm land is often damaged by natural forces and by certain farm practices. Improvements to land are depreciable investments, as are all of the buildings.

### CAPITAL VS. INVENTORY

Regulations of the Bureau of Internal Revenue, for tax purposes, require a distinction between "capital" and "inventory." "Capital" includes all of the durable items used in (or useful for) production, provided they were acquired for use (rather than for trading). "Inventory" includes all kinds of produce and supplies, whether bought or produced, on hand at a given time for sale or for further use in production. (Corn, for example, can be sold or can be fed to hogs, cattle, or poultry, or even to work stock.) Of the livestock, the work stock, dairy cows, and breeding stock preferably are considered as capital, whereas young animals, feeders, dairy cows (under special circumstances) and rather generally the short-lived kinds of livestock, may be considered as "inventory" by those farmers who qualify for reporting on what is called the "accrual basis." Most farmers, in their own best interests, must set up capital lists as a basis for demonstrating their deduction from gross income on account of depreciation, and they must keep the sales of capital items and of purchased stock or produce separate from produce of their own raising, even though they may be required to file returns on the "cash basis."

Changes in market prices of items in the capital list on a farmer's books do not affect his income for tax purposes until they are sold

or otherwise disposed of. Purchases of capital items do not lessen the income to be reported nor do sales of these capital items add to the income to be reported unless a profit has actually been made in the trade.

The details of filing income tax returns are best ascertained from the forms prepared by the Treasury Department for that purpose and the informative articles published in the newspapers and periodicals during the weeks just before filing dates. Special help may also be obtained from representatives of the Collector of Internal Revenue, who go to county seats and the larger towns for the convenience of taxpayers.

### PERMANENT RECORDS OF PROPERTY

The Extension Service of the United States Department of Agriculture has prepared a capital record and inventory book that is adequate for farms that have more than average amounts of livestock and equipment, and with space for entering inventories for 10 years. It may be obtained through farm-management specialists at the State Agricultural Colleges. In addition to the values of property of each kind on inventory dates, the book provides for showing other facts about the property.

Prepared farm-account books usually provide for a first summary of inventory items into 10 to 12 groups, which are then brought together as group totals on another page, all being shown for two dates a year apart. Whatever the grouping, every item on the first rough list finds a place, and, of course, the totals of the groups, whether 4, 10, or 20, add up to the farm total.

A short summary inventory of a farm business is shown here in table 1. It is of the balance-sheet type, much like those of commercial and industrial institutions. A banker or other creditor might insist on a more detailed statement of livestock and machinery, and a showing of whether there was feed enough for the livestock the farmer intended to buy. Summaries from detailed inventories can be made up to show any such special information if it is desired.

Table 2 shows 12 of the principal items of the machinery list, each identified by year of purchase, the cost then, and the value on inventory date, for 2 years on a book ruled for a 6-year record. The Extension Service's book provides for 10 years, provides for working out the depreciation for income tax purposes, and gives appropriate forms for other kinds of property. No one arrangement can serve every farmer equally well. The main object is to have the facts on paper so described that no mistakes can happen.

TABLE 1.—*Summary of a list of property made for Brook Farm by its owner on January 1, 1944*<sup>1</sup>

FARM BUSINESS CAPITAL (THE ASSETS)	
Land—125 acres at \$89.60.....	\$11, 200
Buildings (house, \$2,500).....	8, 600
Machinery.....	2, 000
Tools and equipment.....	550
Work stock—4 head.....	400
Cattle—26 head.....	1, 600
Hogs—4 head.....	30
Poultry—50 head.....	70
Feed.....	600
Supplies.....	130
Cash and credits of all kinds.....	320
Total investment.....	25, 500
SOURCE OF FARM CAPITAL (LIABILITIES)	
Bank loan.....	\$200
Dealer accounts.....	25
Jane's Father, on mortgage.....	5, 000
Dad, on demand note.....	3, 000
Total owed to others.....	8, 225
My own investment ( <i>net worth</i> ).....	17, 275
Total capital fund.....	25, 500

<sup>1</sup> These are the group totals of several hundred items listed individually in a composition book. At the end of the year, all items then remaining of those here summarized, and all the things added during the year are counted, measured, and valued, and summarized. As the purpose is to find out facts about the changes that have occurred, one should expect all group values to be larger or smaller, rarely the same in value.

TABLE 2.—*Section of part of the Brook Farm property list on January 1, 1944, showing values of 12 items of the machinery*<sup>1</sup>

(Page) Crop equipment

Item	Bought		1943	1944	1945	1946	1947	1948
	Year	Price						
Tractor.....	1941	\$1, 400	\$1, 010	\$850	-----	-----	-----	-----
2-bottom plow.....	1937	110	39	33	-----	-----	-----	-----
8-foot tandem disk.....	1939	130	65	55	-----	-----	-----	-----
4-section spring tooth.....	1933	75	13	11	-----	-----	-----	-----
6-section harrow.....	1935	40	10	9	-----	-----	-----	-----
8-foot packer.....	1936	135	40	33	-----	-----	-----	-----
Lime sower.....	1940	100	60	50	-----	-----	-----	-----
Manure spreader.....	1940	175	105	88	-----	-----	-----	-----
Grain drill—fertilizer.....	1942	265	225	192	-----	-----	-----	-----
7-foot mower.....	1938	140	60	50	-----	-----	-----	-----
Grain binder.....	1934	240	85	70	-----	-----	-----	-----
Corn binder.....	1936	250	75	65	-----	-----	-----	-----

<sup>1</sup> These 12 items total \$1,506 of the \$2,000 shown in the summary, Table 1. The value of these same items the year before was set at \$1,787, whereas the original prices amounted to \$3,060. This arrangement is purely for illustration. Some might like to place the items by types of machines, the grain machinery in one group, for example. Differences in value such as are shown here are not acceptable as depreciation (for the year 1943) unless the computed depreciation was subtracted from the 1943 values to get the 1944 values, item by item.

## RECORDS OF RECEIPTS AND EXPENSES

Some kind of record of receipts and expenses is available on most farms, so that the forms to use become a matter of choice. It goes almost without saying that all of the money received from any sort of action (sales made or services rendered) and *all* of the money paid out for any sort of services, equipment, or supplies, should be included either in the farm record or in the farmer's personal records.

### COLUMN-RULED BOOKS

Most farmers seem to prefer for their financial record a book with several columns on each page so that the amounts accumulate by enterprises or by some other grouping of items. One such book prepared for use by farmers in Dairy Herd Improvement associations has 8 columns for receipts and 8 for expenses on facing pages, in addition to the space for describing the transaction. Six columns are labeled for groupings common on dairy farms and 2 are left for the farmer to fill as he wishes (table 3). Books with as many as 13 columns on each page can be obtained. Whatever the number of columns, the groupings decided upon should be strictly maintained if the column totals are to be used unchanged. One column on each page can be used for personal items and another for infrequent items. The attractive feature of these many-columned books is that the whole record of cash received and cash paid out is summarized whenever the columns are added.

### LEDGER-RULED BOOKS

Farmers who expect to use their records for detailed study of parts of their operations have found a ledger-type book more convenient than the many-column journal, unless they decide on a combination of the two types.

The ledger type of farm account book is ruled to accommodate receipts and expenses on the same page (see table 3A), or if more space for writing is wanted, opposite pages may be used—one for receipts, the other for the expenses. The "accounts," as they are called are restricted to closely related groups except for the "catch-all" pages set up to show "everything else." The attractive feature of this kind of book is that all of the cash transactions to date, for each enterprise selected for study, appear on the one page as they went into the book, both receipts and expenses. The ledger type of book is a little harder to keep in order and to check with cash on hand than is the many-column journal type.

TABLE 3.—Tops of facing pages from a book ruled for 8 groups of items each <sup>1</sup>

Month March 1943

## FARM RECEIPTS

Day	Items	Quantity	Milk or butterfat	Dairy cattle	Other live-stock	Poultry and eggs	Crops sold	Outside work	Other receipts
2	Veal calf to Brown			\$14.50					
3	Eggs	60 dozen							
7	Potatoes to general store	10 bushels					\$11.50		
10	February milk	7,540 pounds	\$238.26						
11	Town warrant (road work)							\$6.00	
14	Hay for Clarence	1 load					16.00		
17	Eggs	60 dozen				20.00			

Month March 1943

## FARM EXPENSES

Day	Items	Quantity	Labor hired	Feeds bought	Farm improvements and repairs <sup>1</sup>	Mach. and equipment bought, repairs, oil and gas <sup>2</sup>	Livestock bought and expenses <sup>3</sup>	Crop expenses	House	Other expenses
1	Sarah, for house									
3	Dairy ration	1 ton		\$50.00					\$40.00	
	Oats for hogs	36 bushels		47.50						
10	Hauling February milk	50 bushels		49.50			\$11.31			
	Deduct for advertising						7.54			
	Deduct for butter and cheese						3.00		4.50	
13	Dr. Pags (cow)									\$39.68
	Bal. income tax									
	Gasoline (Feb.)	35 gal				\$7.14				
	Coal for brooder	1/4 ton					6.75			
	Fertilizer	3 ton						\$105.00		

<sup>1</sup> This form was prepared for use by farmers in dairy herd improvement associations who wished to study their whole farm business of which cow testing was a principal part. Other kinds of farm business would use different column headings, and a dairy farmer might want other headings for his expenses. The pages had 35 lines, which would be plenty for most months. These entries are probably complete enough for a farmer's own use, as he can recall other details, or he may hold other papers for a year or two. More detail on some items might be desirable for some lines of study begun after several years had passed.

<sup>2</sup> These columns should be read through at the end of the year to figure the amount of capital items for making up the property list.



TABLE 3A.—Ledger-type page: Cattle <sup>1</sup>

1943	Expenses		1943	Receipts	
	Item	Amount		Item	Amount
Jan. 5	D. H. I. A. 18 cows @ 3.00, 6 mos.	\$54.00	Jan.	Calves of Nos. 35-36	\$14.00
Jan. 27	Dehorning bull	1.50	Feb. 26	No. 13's calf	4.00
Feb. 15	Salve	.50	Mar. 2	Fat calf to Brown	14.50
Feb. 20	Epsom salts	.75	Mar. 3	Sold No. 13 to Co-op	50.00
Feb. 25	Dr. H., 2 visits	5.00	Mar.	3 calves (Nos. 20-22-30)	19.50
Mar. 5	Grinding feed	3.15	Apr.	3 calves (Nos. 38, 33, 34)	21.00
Apr. 6	Cow salt 500 pounds	7.28	May 27	No. 4 to C. D.	85.00
May 16	2 gallons cow spray	2.38	June 18	No. 16's calf	6.00
June 18	Dr. L., 3 visits	7.50	Aug. 10	Sold No. 28 to J. A.	75.00
June 20	Cow Ease	1.40	Aug. 30	Sold No. 6 to A. B.	100.00
July 5	Bal. of D. H. I. A. bill	54.00	Oct. 15	2 calves (Nos. 40, 29)	14.00
Aug. 17	Grinding feed	3.45	Dec. 6	Calf (No. 41)	5.50
Sept. 3	2 halters	1.50		Total sales of cattle	413.50
Oct. 6	T. B. test, all cows	36.00	Year	Milk sold (from table 4)	3,281.85
Nov. 30	Grinding feed	3.75		Total of direct receipts <sup>2</sup>	3,695.35
	Total	182.16	Year	Value of milk used by family (from table 4)	95.36
Year	From table 4: Hauling 100,000 pounds sold.	150.00	Dec. 31	Increase in value of herd (from cattle inventory page)	30.00
	Advertising	100.00			<sup>4</sup> 3,820.71
	Can service	50.00			
Year	Feed bought (from feed page).	408.00			
	Total of direct expenses	<sup>2</sup> 890.16			
Dec. 31	Balance	<sup>5</sup> 2,930.55			
		3,820.71			

<sup>1</sup> This sort of page brings close together all the expenses and all the receipts that the record has on the enterprise named at the top (cattle). At the top are the cash payments and receipts readily determined as chargeable to the cows. For convenience a special score is set up (in table 4 or its equivalent) to accumulate the record of milk sales and expenses paid through deductions by the factory and only the totals are put down here.

<sup>2</sup> The total of easily identified expenses on cattle.

<sup>3</sup> Total of readily identified cash receipts from cattle and milk sold.

<sup>4</sup> The herd was judged to be worth \$30 more at the end of the year than at the beginning and the cows have been given credit for the milk used by the family. Some farmers also like to credit cows with the manure available for crops.

<sup>5</sup> This is the amount available to cover all other expenses—like taxes, depreciation, home-grown feed—own labor, and profit. The amount of the several parts of this balance may be obtained by dividing the farm total expense (on other pages of the book) of each kind among the income-producing enterprises, according to the service rendered to each.

### ONE FULL DESCRIPTION NEEDED

Somewhere in the set of records there should be one description of each transaction that is full enough to answer later questions that may come up. For the larger items this description may just as well appear on the account book on the day the sale was made. Besides the money received on that day, the complete record includes the purchaser, the quantity and quality of the goods sold, and date of delivery, unless it was a spot-cash sale. Expenses are similarly described. Thereafter, the details that may be wanted for a special summary may be taken off—the date, the money or the quantities, or any other recorded information.

### READY-MADE RECORDS OF DETAIL

Dairy farmers usually are paid once or twice a month for milk or cream delivered. The buyer's statement will show the quantity delivered, the fat test, the price per unit, total value, the charges to be paid (for hauling or other services agreed to) and the net check.

The farmer may consider a file of these statements as his detailed record, entering in his book the value of the milk as received and the deductions as paid out.

In the seasons of active marketing a special memorandum book to show deliveries made by date, purchaser, quantity, quality, price, and terms is a convenient way of recording information and summarizing the receipts of a commodity without filling the main farm book unevenly. Eggs, fruits, and vegetables are among the items that may be recorded in this way. Amounts paid for the small items—paid for hardware, dry goods, groceries, and the like—are shown on sales tickets made out by the clerk at the store. If these are sorted and totaled each month one entry for each sort will serve most purposes, which saves time and space in the book.

### CHOICE OF DETAILS UP TO EACH

Each farmer decides for himself how much detail he wants to put into his farm financial account. As suggested before he can divide his record keeping as he likes, for study of any single part or group of parts. As soon as he makes the decision, appropriate sorting of the property list brings out the kinds of property on which separate records are to be kept. A dairyman's livestock may include hogs, poultry, and sheep, besides the dairy cattle. And dairy cattle means both the cows and young stock. Special expenses for livestock are rather limited, but whenever payments for feed or supplies or services of any kind are known to be used for one class of stock the record should show the facts.

### SALES OF LISTED PROPERTY AS RECEIPTS

Besides the receipts from sales of produce like milk and eggs, and crops sold at harvest time, farmers often sell some produce out of stocks in storage on the farm or represented by warehouse receipts; and they sell animals, and now and then they sell or trade equipment. To the extent that any of these items of receipts are in the property list, these receipts are not income of the current year, because they were made a part of the business assets before inventory date. Only the change in value after inventory date can be counted as current income.

Similarly, money paid out for an expensive machine is an investment, the value of which will be spread out as part of the cost of every unit of product made with it. Its value remaining at the end of the year appears in the capital assets. Money paid for supplies bought in excess of actual use in one year is spread out over the years in which the supplies will be used. The quantity and value remaining in the machinery and supplies bought during the year appear on the property list at the end of the year as the bookkeeper's way of preventing overstatement of the cost of one season's product because of machinery and supplies bought but not used up. An inventory item equal to the value of supplies paid for but not used is needed to show where a sum of money has been invested by a purchase in advance.

In doing the day-to-day work on the records of receipts and expenses, the same names should be applied to items and groups of items as were used in working up the property lists.

### **SORTING RECEIPTS AND EXPENSES FOR RECORD**

The sources of income are relatively easy to keep distinct. Even if a column like crops sold (table 3) contains entries for sales of hay, berries, tomatoes, potatoes, wheat, corn, and the like, the total for any one or two may be picked off quickly. The expense items are usually more numerous in kind and purpose. For the purposes of a general summary, the total of each kind of expense (keeping the names of unlike things distinct) is enough. All the hired labor, all the feed, all the machinery repairs, and fuel and the like may be put in separate columns. The infrequent items such as taxes, insurance, notes, interest, and rent, may be put into one column and specific items sorted out later as needed. Assigning the expenses to the enterprises served is usually left to the end of the season or to the end of the year.

### **PRODUCTION, PERFORMANCE, AND INCIDENTAL RECORDS**

Besides the inventory and financial records, other measures in the records help to give meaning to changes in the amounts. The kinds of measures are as numerous as the questions farmers want answered. With these, as with the financial accounts they help to explain, no more record work need be attempted than the present needs suggest. The starting place is the facts that show how income can be increased. Careful study of expenses can result in more net income for the family even when increases in receipts cannot be had.

#### **PRODUCTION AND FINANCIAL RECORDS RELATED**

The relationships between facts that often go unrecorded and the steps that may be taken in a study of performance are illustrated by forms used by dairy farmers. Market-milk producers sell most of their milk, and in practice, buyers, when settling for milk delivered each month show the details like those tabulated in table 4.

The dairyman who made that table had all these measurements of his production handed to him on 12 pieces of paper. The summary took only as much time as he needed to write the figures when the check came each month, and though it is true that the dairyman would have had all the figures if he saved the settlement statements, the table brings out relationships that otherwise are not clear.

For example, the deliveries were very uneven; the fat test was lowest in the high-production months; prices dropped to a low for June then rose rapidly to a high in November. The actual average price was \$3.28 per 100 pounds, but because of charges for hauling, advertising, can service, and the butter and cheese bought by the family during these months the net check averaged only \$2.92 per 100 pounds.

#### **PRODUCTION DETAIL RELATED TO SUMMARY**

Milk fed to calves and milk used by the family can be estimated to reach a total production for the year. The detail shown in table 4A reveals that farm use took more than 10 percent of production of March, April, and May, but took only 2 percent in October. Market-milk producers usually feed very little whole milk to calves. This illustration reflects a general position that calves worth rearing for

replacement are worth feeding enough whole milk to give them a good start. Even when prices for milk are high, prices for veal calves may be high enough to pay for the few hundreds of pounds of milk needed. The indicated price, \$2.98, would be cut to \$2.87 if the price for the month of use were to be applied instead of the average price for the year. Of course, the calves are not expected to return the cost of hauling, advertising, or can service. Milk used at home also is figured at wholesale price at the farm—without hauling and other expense.

Farmers who sell butterfat skimmed at the farm have less of their bookkeeping done for them by the buyer than was indicated above. The questions of efficiency of the cream separator, fat tests, value of skim milk, etc., come up for examination.

A second step in studying performance of a dairy herd is summarized in table 4A, which shows the monthly production of each of the cows that contributed to the sales record of table 4. This showing can be made only if there is a cow-testing-association record of production or its equivalent. In this case, too, the figures would be placed first on some other form each month. For those who keep this form the advantage of seeing the record develop month after month has been worth more than the effort.

TABLE 4.—Summary of a market-milk producer's monthly returns from the buyer <sup>1</sup>

Month	Sales and estimated farm use <sup>2</sup>	Butterfat test <sup>3</sup>	Price per 100 pounds	Value of milk	Deductions for			Net check <sup>6</sup>
					Hauling at 15 cents per 100 pounds	Advertising 10 cents per 100 pounds, and can service <sup>4</sup>	Butter, cheese, for family use <sup>5</sup>	
	Pounds	Percent	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
January.....	7,996	3.8	3.16	252.67	11.99	18.00	5.40	217.28
February.....	7,540	3.8	3.16	238.26	11.31	7.54	4.50	214.91
March.....	8,037	3.7	3.07	246.74	12.05	18.04	5.98	210.67
April.....	9,563	3.7	3.07	293.58	14.34	9.56	5.25	264.43
May.....	10,425	3.6	3.07	320.05	15.64	22.43	5.50	276.48
June.....	10,550	3.6	3.06	322.83	15.82	10.55	6.10	290.36
July.....	8,925	3.7	3.17	282.92	13.39	18.92	6.80	243.81
August.....	7,324	3.7	3.31	242.33	10.99	7.52	5.40	218.62
September.....	6,720	3.8	3.30	221.76	10.08	14.72	5.40	191.56
October.....	7,385	3.8	3.60	265.86	11.08	7.39	5.75	241.64
November.....	7,591	3.8	3.87	293.77	11.39	7.59	4.70	270.09
December.....	7,944	3.8	3.79	301.08	11.92	7.94	5.75	275.47
Total or average.....	100,000	-----	3.28	3,281.85	150.00	150.00	66.53	2,915.32
Fed to calves.....	4,800	-----	2.98	143.04	-----	-----	-----	-----
Used by family.....	3,200	-----	2.98	95.36	-----	-----	-----	-----
Grand total.....	108,000	-----	-----	3,520.25	-----	-----	-----	-----

<sup>1</sup> This sort of form brings together all the information the buyer sends back with the check in settlement for the milk delivered. One who tries to make something out of these same figures on 12 sheets of paper will probably admit an advantage in putting down 8 to 12 figures once a month when settlement is made.

<sup>2</sup> The estimated quantities of milk fed to calves (4,800 pounds) and the milk used by the family (3,200 pounds) is added at the bottom to get the total production for the year. Some farmers would be interested in adding columns to show each month the quantity taken for the calves and for the family. See table 4A for production for the month (8,700 pounds for January).

<sup>3</sup> Fat test is often used in figuring the price paid. The variation in monthly test is usually small for large herds having cows freshen every month or two.

<sup>4</sup> By agreement, each producer contributed 10 cents per 100 pounds of milk sold to a fund for promoting the interests of dairymen. Thus \$100 was deducted by the buyer and turned over to the committee in charge of promotion. The buyer also deducted for can service \$50 as follows: Jan. \$10; Mar. \$10; May \$12; July \$10; and Sept. \$8. These are booked as farm expenses (see entry for March 10 in table 3).

<sup>5</sup> This covers butter and cheese bought from the milk plant (plant byproduct). The item appears as a cash expense for butter and cheese in the House column of table 3 and in the Food column of table 6.

<sup>6</sup> These figures would appear on bank statements or check-book stubs.

TABLE 4A.—Production record of 23 individual cows for 1 calendar year <sup>1</sup>

Cow <sup>2</sup>	January	February	March	April	May	June	July	August	September	October	November	December	Production, 100 pounds <sup>3</sup>	Date fresh	Calf <sup>4</sup>
1.	8	6	7	7	6	5	2		6		9	10	75	9-11	H
4.	5	5	4	3	3								20	7-28	H
6.	7	6	8	6	4			10					41	11-5	H
8.	11	8	9	8	7	5	3				8		71		h
13.														6-15	b
16.	4	4			11	6	10	10	11	12	8	6	71	2-26	H
18.			9	10	10	10	8	8	5	5	5	4	73	3-25	b
20.	8	7	4	6	7	8	10	7	8	6	6	3	72	3-15	b
22.			2	6	5				7		5		71		b
28.	6	6	5	5	3								25	10-3	b
29.	7	6	7	7	5	5	3		4		4	6	50	3-30	h
30.				6	6	7	6	5	4		4	3	46	12-6	H
31.	12	10	11	8	5	4	2	4	4			8	60	1-17	b
32.	4	8	7	6	4	4	4	4	4		5	5	60	4-30	b
33.	5	2	2		7	8	8	6	5	5	5	5	56	4-15	h
34.					9	9	8	6	6	2	5	4	55	1-12	b
35.	5	5	6	3	7	7	5	5	4	4	2		52	1-3	b
36.	5	4	5	6	7	7	6	5	4	4	3		50	2-14	H
37.			1	6	8	7	6	4	3	3	3	3	42	4-2	b
38.				5	7	8	6		2		4	6	17	9-15	h
39.										4	4	6	16	10-1	b
40.													5	12-2	b
41.															
Total	87	82	90	106	117	110	95	81	73	75	79	85	1,080		$\left\{ \begin{array}{l} 6H \\ 4h \\ 11b \end{array} \right.$

<sup>1</sup> This table brings together milk production records from such sources as the cow-tester's record book, in which each cow has a page, or from milk sheets if the farmer weighs the milk of each cow. Production is rounded to the nearest 100 pounds, for simplification of this illustration. Butterfat production not here shown for individual cows, is also an important measure of a cow's value, as is milk production.

<sup>2</sup> Cows are here given numbers instead of names. No two cows have had the same number since the system began. Purebred cattle are assigned their registered names and numbers for record.

<sup>3</sup> These totals are the sums of the monthly production records. Only 4 cows, Nos. 32, 35, 36, and 37, have a complete lactation period within this calendar year. In judging the worth of cows, the owner does well to bear in mind the previous record of the cow, as well as the condition of the cow in relation to current lactation record.

<sup>4</sup> Sex of calf is indicated by H for heifer calves to be raised, h for heifer calves sold or lost, b for bull calves sold. No bull calves were raised on this farm.

## COMPUTATION OF RATES OR AVERAGES

Rate of production is figured in many ways, each satisfactory to one who understands the way the figure he uses was reached. Table 4A provides the means for showing the effect of different counting schemes on the rate of production. Total production was 108,000 pounds.

	Pounds
Production per cow on hand January 1.....	6,000
Production per cow, average of numbers on inventory dates (18+19÷2)---	5,840
Production per cow year (217 cow months on farm ÷ 12)-----	5,980
Production of 14 cows each on farm a full year (86,400 lbs. in all)-----	6,170
Production per month per cow, not counting dry time, was-----	584

The average number of cows milked on any day was 15.4; 18 cows were milked in May, 13 in January and August.

## ONE COW'S LONG-TIME RECORD

The principal defect of this summary form is that the production scores of only 3 of the 23 cows are complete for the year recorded. To help improve the management of the cows many dairymen keep the equivalent of table 4B which presents the production record of cow No. 8 from the time she was first fresh on this farm in April 1939 through December 1943. There are four lactation periods complete in the 4 years and 9 months shown. The first lactation record shows 8,610 pounds in a little more than 13 months. Here again, the small effort needed to collect the figures from five cow-testing-association books or their equivalent brings out the character of this cow as a producer. Though these individual records may be kept for selected cows only, what a farmer learns from studying the short records—"short" because a cow was sold or died too soon—is valuable.

TABLE 4B.—Production record of cow number 8 for the 5 years since she was bought <sup>1</sup>

	1939	1940	1941	1942	1943
	Fresh 4-19 H. (kept)	Fresh 8-17 H. (kept)	Fresh 9-15 B. (sold)	Fresh 9-29 B. (sold)	Fresh 11-11 H. (kept)
	Pounds	Pounds	Pounds	Pounds	Pounds
Total for year.....	6,230	6,550	7,330	6,060	7,100
January.....	---	620	820	775	1,060
February.....	---	520	700	630	810
March.....	---	575	775	660	860
April.....	440	315	600	600	800
May.....	840	350	465	385	730
June.....	760	2,380	360	60	540
July.....	800	---	3,720	3,110	300
August.....	800	400	---	---	5,100
September.....	700	1,050	430	---	---
October.....	630	960	1,170	800	---
November.....	610	840	1,060	1,110	755
December.....	650	920	950	1,040	1,245
	6,230	4,170	3,610	2,950	2,000

<sup>1</sup> This form was used on a commercial dairy farm producing market milk before World War I. The author used it later on small farms and has seen several adaptations of the scheme—card records 4x6 inches, 5x8 inches, and 8x10 inches, specially printed, and hand ruled. Reverse of record showed the ancestry of cows if known, source of cows bought, purchase price or estimated value of heifers raised, services, what was done with the calves (especially those saved for replacement), and the manner of disposing of cows taken off the record. Butterfat production would also be recorded by some dairymen.

*Cow testing* done in dairy herd improvement association projects is a special way of using performance records to get at the relative



value of individual cows as producers. Besides the appraisal of production of milk and butterfat the tester observes the feed consumption of each cow, both grain and roughage, and computes the value of the product and the cost of feed. Cow testing has been done on a subscription basis. Many thousands of farmers have benefited by the information made available to them in this work.

### POULTRY FARMER'S RECORDS

In some form, the *egg production* score seems to be the most widely kept of the performance records. Along with it, the count of layers contributing to the production and the quantities of feed used are helpful in getting best results from the flock. Table 5 shows a score sheet for every day in the year. With so large a flock (a commercial flock) each day's score would be picked up from tally sheets for each pen and each collection during the day.

Birds are counted carefully in the fall when they begin their laying year. Thereafter, the total of birds removed (sales or deaths), subtracted from the original count, shows the number at any time. An occasional actual count to check the record may be desirable, especially if predatory animals have been at work. Average lay (12.4 eggs per hen in January) and rate of lay (40 percent in January, equal to 12.4 eggs divided by 31 days) are good measures of the effectiveness of the feeding and care. Table 5A shows a form used for computing the quantity of feed used. Extension of the arithmetic provides the cost of feed, feed cost of eggs, pounds of feed per dozen eggs and some other measures. The value of feed for the laying flock for a year has been about 60 percent of the value of the eggs produced by good flocks studied with that performance measure in mind. Hence, if feed value runs much above or below 60 percent of the value of the eggs produced looking into the facts may pay well.

Performance records similar to the milk and egg records can be devised and kept for other crop and livestock enterprises. The results can be compared with the estimated yield or production that was used in setting up the farm program and then used as a basis for next year's estimate. Production per cow, per sow, and per hen, can also be compared with what farmers in the locality consider as standards of good accomplishment.

TABLE 5.—*Egg-production score of a 1,500-layer flock*<sup>1</sup>

Day of month	Eggs laid (total gathered from all pens on—)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	590	580	575	570	610							
2	595	585	575	572	615							
3	600	590	578	579	625							
4	600	585	574	576	640							
5	602	584	579	578	650							
6	605	584	580	575	647							
7	608	583	575	585	646							
8	610	582	577	585	640							
9	601	585	579	593	620							
10	599	582	573	587	628							
11	605	580	573	592	623							
12	604	583	575	594	630							
13	600	580	571	596	635							
14	599	579	570	590	637							
15	598	576	572	595	630							
16	596	580	573	598	633							
17	592	577	568	595	631							
18	596	576	570	600	637							
19	590	580	570	600	638							
20	585	574	568	600	644							
21	587	574	570	605	647							
22	591	572	555	610	640							
23	589	570	560	615	636							
24	591	573	565	611	642							
25	596	574	561	615	639							
26	594	578	564	613	645							
27	592	572	560	618	640							
28	593	574	570	613	632							
29	591	578	568	611								
30	565	570	564	606								
31	575		567	603								
Total.....	18, 439	17, 360	17, 680	18, 480	17, 780	18, 910	19, 024	21, 185	17, 850	14, 400	12, 040	9, 450
Number of hens.....	1, 487	1, 400	1, 360	1, 320	1, 270	1, 220	1, 160	1, 115	1, 050	960	860	700
Eggs per hen.....	12.4	12.4	13.0	14.0	14.0	15.5	16.4	19.0	17.0	15.0	14.0	13.5
Rate of lay, percent.....	40	41	42	45	50	50	55	61	57	48	45	45

<sup>1</sup> In the Northeast pullets are housed for the winter by October 1, and the laying year goes through the next 12 months. The average number of hens is reached by subtracting the numbers taken out from the number started, allowing of course for the time the hens were in the flock. Mortality shows up in the course of counting birds. Close culling of birds that have stopped laying saves feed and increases the rate of lay.

TABLE 5A.—*Computation of feed consumption of a 1,500-bird flock for the month of October*<sup>1</sup>

Kind and source	Feed per day (pounds)	Days fed	Total fed (pounds)	Price per 100 pounds	Total value	
					Home-grown	Bought
Grain:						
Corn (home-grown)-----	82	31	2, 542	\$2.40	\$61.01	-----
Wheat (bought)-----	82	31	2, 542	2.75		\$69.90
			5, 084	2.57		
Mash (all bought):						
Corn meal-----	52	21	1, 092	2.55		27.85
Bran-----	52	21	1, 092	2.15		23.48
Middlings-----	52	21	1, 092	2.20		24.02
Beef scrap-----	52	21	1, 092	4.35		47.50
Redifeed (mixed)-----	210	10	2, 100	2.50		52.50
			6, 468	2.72		
Other feed:						
Cabbage (home-grown)---	50	31	1, 550	1.00	15.50	-----
Shell and grit-----						5.00

<sup>1</sup> In the Northeast the pullets have begun to lay and are housed as layers for the poultry year by October. The average number for the month was figured at 1,487, a few having been sold and a few others died. The cabbage was a partial substitute for range. It turned out that the Redifeed mixture could be bought for \$2.50 compared with \$2.81 for the ingredients home-mixed. The grain and mash together make 7.78 pounds per hen which is at least 1 pound more than standard requirements, indicating a need for going further into the feeding problem. Egg production for the month was 18,439 eggs or 12.4 per bird. That would also be called "40-percent production."

## FARM MAP

A *farm map*, even of the roughest sort, drawn on wrapping paper tacked to a cardboard can be made to show the crop grown on each field for a number of years, the yield per acre, the manure, lime, or fertilizer treatments given, and notations as to why results were better than expected, or worse. Those who were interested in the early Agricultural Conservation Programs will recall how serviceable even those small rough drawings were when they were labeled and tied to the farm work sheets by letter and acreage. Many a man when looking at his map wondered why his fields were all so small and irregular. The usual answer was a new lay-out to make fields that are larger and easier to work.

## DIARIES

Some farmers still find a *diary* useful in arranging their work. They write down what they did on the farm or otherwise, and notes on the weather. Cash transactions can be included in a diary. Such a cash record might serve a small farm business for many years, but as soon as any use is to be made of the figures, those that are wanted would have to be picked off. In the absence of a means of checking completeness, a farmer has no assurance that all receipts or expenses have been written down.

## FEED

*Feed* is one of the main items of cost for a livestock farmer although in many areas only a small proportion of the feed is bought from other farmers or from a grain elevator. The cost of home-grown feed is the cost of land use, of power and machinery and labor to work the land, and of some materials. Many of these costs are shared by all the crops grown and by the livestock kept. As these costs are difficult to apportion to a particular class of feed it is satisfactory for most purposes to use a current market price.

The quantities of the kinds of feed used by each kind of livestock can be very closely estimated. The market value of the feed used at home can be divided among the livestock according to the feeding record and can be used as one factor when analyzing net returns from each class of livestock.

Bulky feeds are hard to measure and even though they may be carefully measured at harvest time they shrink during storage. Hay may shrink as much as one-fourth between putting up and feeding late the next spring. In appraising values of feeds or other crops on hand at inventory, it is best to use a safe figure. Any purchased feed held over is properly put into inventory at the price paid.

## LABOR

Most farmers shy away from a *labor* record. That means to them accounting for all their working hours for 365 days a year and the working time of their farm helpers—for every job done. Such detailed scoring has been done in time studies for short periods.

Some record of wages paid and the period covered is already in the record of cash expenses. An estimate of the board and other pay besides cash can be added to cash wages to find out what the hired work cost. A sketchy note of days worked and kind of work done would

provide a close estimate of the cost of labor per hour. It requires only a few figures a week to line up the time worked by each farm worker on the main jobs. Even though such a record can be a few hundred hours a year too high or too low, the figures have some interest.

Farmers who have kept such records have occasionally been surprised by the number of days they had puttered away at odd jobs, or the number of days lost because of bad weather. Some farmers might like to compute earnings of unpaid family help for the time they worked at going wage rates for comparison with what the business provided after bills were paid.

### OTHER RECORDS AS NEEDED

All the records that have been discussed can be interesting from the very beginning, just as baseball fans keep and follow the score card while the game is going on. Few are interested in the final score so much as in the play of the teams. The performance of the farmer's livestock and crops is important to the dollar results he obtains. His problem is to discover what changes in operations will increase the production and decrease the cost. Even small changes when fixed into practice are likely to add up to a total that is just as important as the big swings that a man gets once or twice in a lifetime.

But along with the interesting score keeping, or looking into things, the routine work must go on, keeping the facts in reasonable order for summarizing. Much can be done during the year to assure the correctness of the entries, and if columns are added to date several times and crop yields are summarized after harvest, the time and effort required at the end of the year is reduced. A farmer should avoid undertaking an elaborate scheme of record keeping, so that the records kept may be completed as planned.

### HOUSEHOLD ACCOUNTS

In managing the household the housewife has the same sort of use for information on expenses as the farm operator has for details he needs in planning the farm work. She has her own priority ratings for everything the family needs. To make possible a study of family expenditures as a basis for making the best use of the money available is the object of the household accounts, but in the home, as in the field work, the measurements in terms of quantities often are more helpfully informative than the money-values assigned.

In the farm-account book provision can be made for showing the amounts used for household expenses as one or more entries (table 3). The details appear on the household book, which supplements the farm book. The household normally has only as much money income as the operator sets aside for paying for food, supplies, clothes, telephone, electricity, furnishings and equipment, medical services, automobile, schooling for children, entertainment and recreation for the family, and contributions to social enterprises.

TABLE 6.—*Part of a page of a household account book*<sup>1</sup>

(Page)

MARCH 1944

Day	Item	Cash	Spent					
			Total	Food	Clothing	Supplies	Personal	Miscellaneous
1.....	Cash from February.....	\$1. 50						
3.....	Cash from farm.....	40. 00						
	Meat.....		\$2. 65	\$2. 65				
	Cereal and flour.....		4. 38	4. 38				
	100 bars soap.....		5. 98			\$5. 98		
	Hair cut, wave trim.....		3. 25				\$3. 25	
	Postage (3's).....		. 75					\$0. 75
5.....	Church pledge, March.....		3. 50					3. 50
6.....	Sent for underwear.....		2. 83		\$2. 83			
7.....	Tooth filled.....		2. 50				2. 50	
8.....	Red Cross drive (school).....		5. 00					5. 00
10.....	8 lbs. butter, \$3.75.....	} 4. 50	4. 50	4. 50				
11.....	2½ lbs. cheese, \$0.75.....							
12.....	Groceries, 2 shirts.....		7. 73	4. 28	3. 45			
	Plate collection.....		. 15					. 15
15.....	Totals to date.....	46. 00	43. 22					
15.....	Cash counted.....	2. 78						

<sup>1</sup> This book shows only expenses, except for noting the amounts set aside in the farm book for household expenses (the \$40 and the \$4.50). On March 15 the housewife checked her expenses against cash received and found in her purse the \$2.78 the record showed she should have. The right-hand page of the book may be used for calculations, notes on items, and other things that some people put in diaries.

Many women may like to keep track of the cash outlays in a stiff-covered blank book ruled with 5 to 7 columns and having 30 to 40 lines. Headings may be written in month by month (table 6). Household account books have been prepared by home management specialists in the States and may be had from the State extension services. Copies of the form used by the Farm Security Administration, which includes both farm and home accounts (Form FSA-RR 195), can be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 15 cents. Prepared books often include forms for canning records and use of farm supplies.

Some housing expenses are commonly entered in the farm book. Taxes, interest, insurance and maintenance of the dwelling are part of the farm bills unless the family share is separated out.

Among the contributions of the farm women to the success of their family budgets is the boarding of hired men. Cash wages with board on the average are about one-third less than the wages of hired labor without board. Part of the difference is earned by the farm woman for her personal services. Few farmers enter these earnings in their income records.

More important to family welfare than the money value of food used is the sufficiency of the food supply. Does the farm provide the quart of milk a day each child needs? Is the supply of vegetables liberal enough and varied enough to provide the vitamins and minerals the children need? Few farm families need to be as short of food as many now are because they don't put in the time to grow the food supply and store the surplus. Some score of the produce actually used by the family will be useful in deciding whether to have more or less next season.

A farm garden would perhaps be better appreciated in the farm-income scheme if the value of the product as human food were to be stated instead of the cost of the garden in terms of time put on it.

City retail prices need not be used in estimating the value of the produce but the round figures commonly used, \$25 or \$50, for the garden almost surely understate the value. The cash expenses incurred in raising the garden are generally entered in the farm account rather than in the household record and this is satisfactory. These include seed, fertilizer, spray materials, and a few small items.

The total value of the family living from the farm is an interesting figure compared with the value of the time and the outlays used in producing the items, and with the output for sale. Whatever the figure, it is real income of the farm family, and is part of the farm production. Because no money passes, too many farm people do not count the value of the home-used produce as income of the farm business or as income of the family.

## SUMMARIZING RESULTS

### END-OF-YEAR ROUTINE

At the end of the year the records are completed according to the plan outlined at the beginning of the year. All columns are to be added (to get the totals for the year). This necessary chore may have been reduced by adding up to a certain date several times during the year. Next, the year-end property list or second inventory is made up. The amount of receipts above the expenses should be equal to the money in hand. Some difference is to be expected, as few persons can check exactly on the first trial. Reasonable review of the columns or pages in the financial record for items that ought to be there will usually correct the record as to the more important items. If the record then indicates that there should be more cash on hand than can be counted, the remainder was probably spent for many small items, and must be recorded as spent. Such checking out completes the bookkeeping.

Summarizing the results means using the facts spread on the records to answer questions—first those that were asked in advance, and then others raised during the year or even while working out the meanings of the figures found. Really, the summarizing goes on throughout the bookkeeping period as part of the scorekeeping process. For every time an entry is made in the financial record or on any of the performance scores, the figure goes with the group of items to which it belongs. If, later, the farmer changes his mind about the relation of an item to a group, he can switch the item to the better place merely by crossing out and adding on.

### QUESTION-AND-ANSWER PERIOD

In a farm-record system a farmer should expect to do some rearranging of items that got grouped together during the bookkeeping. For example, take the milk-sales records for the year. The form shown in table 4 is helpful whether the book for receipts and expenses is of the many-column journal type or the ledger type. And the catch-all columns or pages need breaking apart. Most of the expenses, moreover, are easier kept by kind (hired labor, feed bought, seeds, machinery repairs, to mention only a few kinds) than by purpose (cows, hogs, horses, poultry, corn, hay, or other income-producing enterprise for which the expense was incurred).



### PREPARATION FOR FIGURING COSTS

In this discussion of record-keeping, little has been said about figuring the cost of producing the farm products. Figuring costs on a farm is mostly a matter of methodical application of ordinary rules of arithmetic to facts that can be learned from the farm records. People differ as to what kinds of payments are to be considered as "costs"—interest, and family labor especially. Always there are questions about the proper amounts to put in as costs. Each farmer has his own figures to work with and cannot go far wrong on one item without noticing the effect on some other items. Costs that are not easily measured directly may often be well enough estimated. After direct cash outlays have been figured, the indirect costs can be assigned according to their contributions to each line of production. Unit costs are found by dividing the assembled cost total by the number of units produced. If much waste is inevitable the number of units that are available for sale may be a better divisor. Other circumstances may suggest other appropriate divisors.

Two general ways of computing costs are common. One includes only the payments that are definitely made, setting up a remainder for the farmer's own labor and for family labor that is otherwise unpaid, and for interest on his equity in the investment. The other assigns rates to all the recognized elements of cost including interest on all capital investment and the value of the farmer's services in production. Controversy has often grown heated because earnest men were using different cost rates for the various cost elements when computing costs by the latter method. The individual farmer can value his labor and his interest return at the rates that serve his purpose best.

### COMPARISON OF NET WORTH STATEMENTS

For every year's business some of the outstanding results may be arranged for comparison with earlier results, and with results obtained by others as described in the farm papers and in scientific publications. First in usefulness to most farmers is the summary of annual inventory items showing net worth each year (table 7). For such a comparative statement the group classifications should be the same, even though for other uses different groupings of the items are desirable. Comparisons of annual inventory and net worth are desirable even if all the other record-keeping must be abandoned for the year.

Then there are the totals for the principal products sold, and the main items of expense. These are drawn from the records of receipts and expenses. Milk production (total and per cow), bushels of grain produced, tons of hay cut, tons of feed bought, and other facts tabulated year after year have meaning in connection with planning the program for the next year. For, in less time than it would take to describe the arithmetic, the farmer can tell from the size of the several figures, and by his memory of the circumstances, what results he can expect from the several choices in prospect.

These uses of records in planning the farm organization are more fully described in Farmers' Bulletin 1965. The factors needed for budgeting come from the farmer's books strengthened by judgment as to the effects of future prices.

Income for the family was the purpose of operating the farm business, so one of the first summarizing jobs is figuring the amount of income the farm business provided for the family. The illustrations in tables 7 and 8 have been drawn from a general farm business in the Northeast in a year before World War II. All figures have been changed a little to avoid disclosing private affairs.

Each inventory value in table 7 represents the farmer's best judgment of the value of the items on inventory day. These are net totals of groups carried in the detailed inventory. The decreases in real estate, \$33, and in machinery, \$51, mean that depreciation was not entirely offset by improvements, or new items. There was one more cow but fewer heifers at the end of the year, the net total increase being \$30. The same horses were judged to have decreased in value \$30 among them. Feed and supplies showed \$31 more value.

The net decrease in these capital items, \$53, resulted from shifts in the assets, but because the \$53 was not spent to restore the values at the first inventory, the apparent cash income includes \$53, which was taken from capital goods and so is not part of the income of the current year.

Accounts receivable, cash, and accounts payable become the farmer's personal affairs. For example, cash and his milk check for December would more than cover his store accounts on January 1 and again on December 31. It was not feasible to settle completely on either inventory date. The increase in net worth shows a better financial condition.

These facts can be approximated by a farmer whose records are incomplete, for they summarize observed facts on inventory day 1 year apart. They tell much, but it is only part of the story.

TABLE 7.—*Summary of inventories of a general farm in the Northeast in a pre-war year.<sup>1</sup>*

Item	Inventory value		Change in value	
	Jan. 1	Dec. 31	Increase	Decrease
Real estate.....	\$8, 296	\$8, 263	-----	\$33
Machinery and equipment.....	1, 021	970	-----	51
Livestock:				
Cattle.....	1, 600	1, 630	\$30	-----
Hogs.....	50	50	-----	-----
Hens.....	100	100	-----	-----
Work stock.....	360	330	-----	30
Feed and supplies.....	237	268	31	-----
Total physical assets.....	11, 664	11, 611	61	114
Net change.....			-----	53
Accounts receivable.....	225	275	50	-----
Cash (in bank and at home).....	161	111	-----	50
Total investment (assets).....	12, 050	11, 997	(111)	(164)
Accounts payable.....	343	127	-----	-----
Farmer's net worth.....	11, 707	11, 870	163	-----

<sup>1</sup> This is the equivalent of a comparative balance sheet. It shows condition on 2 days, a year apart. The other farm records explain how the net changes came about. (See also table 8.)

TABLE 8.—*Income statement of a general farm business in the Northeast in a pre-war year*<sup>1</sup>**Receipts:**

Crops sold:		
Potatoes.....	\$300	
All other.....	113	
		\$413
Livestock products sold:		
Milk.....	1, 200	
Eggs.....	200	
		1, 400
Livestock sold:		
Cattle.....	300	
Hogs.....	180	
Hens.....	143	
		623
For work done away from farm with farm equipment.....		140
Miscellaneous farm receipts.....		141
Total cash receipts <sup>2</sup> —January–December.....		<u>2, 717</u>

**Expenses:**

Livestock bought:		
Cattle.....	200	
Sow.....	30	
Baby chicks.....	40	
		270
Feed bought.....		258
Hired labor.....		251
Taxes.....		126
Machinery repairs.....		20
Tractor and auto expense.....		187
Seeds and plants.....		40
Fertilizer (\$60) and lime (\$24).....		84
All other cash farm business expense.....		311
Total cash expenses <sup>3</sup> —January–December.....		<u>1, 547</u>

Balance of cash transactions.....	1, 170
Less decrease in value of physical assets (see table 7).....	53
Cash income corrected for decrease in physical assets <sup>4</sup> .....	1, 117
Add home use of food and fuel (total from household book or special estimate).....	350
Family net income from farm business.....	<u>1, 467</u>

<sup>1</sup> Other types of farming would show other groups of items. This example summarizes the transactions of the year as if everything had been settled in cash, as might have been done. (See table 7 in which cash and accounts receivable exceed accounts payable.)

<sup>2</sup> Not including accounts receivable Jan. 1 but counting as income the December sales that were actually collected after Dec. 31.

<sup>3</sup> Not including the \$343 of accounts payable which were expense of the previous year but including the value of the purchases (\$127) that were actually settled after Dec. 31.

<sup>4</sup> This is the cash sum that the family could consider as its cash income; \$163 of it was used to increase the net worth through reduction of outstanding accounts.

**INCOME STATEMENT**

One way of showing the amount of income the family had for their year's work (including the return to their capital) is shown in table 8. From the cash records the group totals shown as cash receipts and cash expenses were taken off. For this special purpose the sales of the year were figured as having been received, though actually the \$275 was not expected until the second week in January of the next year, and the \$225 that was actually received in cash for December sales was treated as if it had been cash in hand on January 1. Similarly, the

\$343 payable January 1 and actually paid after that was the result of purchases in November and December of the previous year and were amply covered by the cash and accounts receivable. The \$127 owed at the end of December was considered as expense of the year, since the things for which the bills accrued were being used. The difference between receipts and expenses thus described was \$1,170. The inventory records showed that the physical property items were worth \$53 less at the end of the year than at the beginning. The amount of the decrease was deducted from the cash balance because, though it had been in hand during the year and could be spent for anything, it was not considered income from the year's business. It came from values previously invested and not completely maintained in value. (The horses were the same three, but they were worth \$30 less as a result of their year's work.) So the cash income available during the year for family and personal uses was \$1,117.

Besides the cash income from operations, farmers get considerable food and sometimes fuel from the farm, without much direct expense. They have the use of the house and other facilities that serve them and the business, and that are paid for out of the receipts of the farm business. These items are important to the family and they should be valued, for reasons indicated in the section on Household Accounts. The scores may be kept separate from the other farm business as in this case, where the value of this contribution was estimated at \$350. The less the farm produces for sale the greater the importance of home-used produce becomes in the welfare of the family.

This family had no mortgage debts. Therefore the entire family net income of \$1,467 was available for use by the family; \$1,117 in cash, and the \$350 as food and fuel, besides the use of the house.<sup>2</sup> But \$163 of the cash income from the year's operation was still "in the business" in the form of cash and accounts receivable and a reduction in accounts payable; it appears as increase in net worth in table 7.

#### EFFECT OF DEBT AND RENTING.

The income available for the farm family on this farm would have been quite different if the farm had been rented, or if it had carried a large debt. The income for the family under either of these circumstances might have been as follows:

If the farmer had to pay as rent \$400 cash to the landlord besides the taxes and other expenses included in table 8 (an arrangement made in some rental contracts) the \$1,467 would shrink to \$1,067 available for family living as income of the year. On the other hand, if he owed \$6,000 on a mortgage at 5 percent, the interest payment would have taken \$300, leaving the family \$1,167 as income. This summarizes the common observation that a farm family on its own farm and free of debt can live more comfortably than one that rents the same farm, or one that pays interest on a heavy mortgage. A family that is free of debt has the earnings of the capital to live on in addition to their return for labor and management.

<sup>2</sup> This way of figuring shows the amount that was available for use outside of the business but does not indicate how the money was spent. In some types of farming the needs for cash are larger than the current income until harvest, so that month-to-month financing of both family and farm expenses needs special attention.

### CAPITAL AND LABOR RETURNS

The total farm-business capital on this farm amounted to \$12,050 (table 7). A 5-percent interest return on that amount would be \$602. Subtracting that from the family net income leaves \$865 as the return for labor and management contributed by the farm family. As the work done by the operator and his family was equal to about 1.5 man years, the annual return per family worker was \$577, after allowing 5 percent interest on the farm investment. This return per worker was somewhat more than prevailing wages for hired labor. Prevailing rates of return at that time on invested capital were less than 5 percent.

The real point to figuring income, aside from the legal requirements that apply to most farmers now, is to reach an understanding of what the changes in the values of the business enterprises mean in terms of the amounts available for the family and in terms of improvements and additions to the farm business.

There have been times when it mattered a great deal to a farmer whether the money in sight was income that he could properly spend or whether it was someone else's money. The flexible set of books here recommended takes somewhat more work than the simpler sets of books that go by the name of the cash system. More information is provided for, in the farmer's own words, and the set can be made to hold as much as any farmer can ever need. There are many points to work out from performance or production records without direct reference to costs and returns as they show up in the financial accounts and annual statements of income. But sooner or later the question of paying off comes up. Without the records the answer has to be a guess.

### DEPRECIATION DETAILS

For those who want to go further into depreciation the following details are given.

Approximate average useful life of depreciable farm property has been discussed in Bulletin "F" published by the Bureau of Internal Revenue, U. S. Treasury Department. The following items have been selected from a longer list on pages 12 and 13 of the edition of that publication, dated January 1942. The estimates are for new property only. Agricultural property is generally divided into (1) buildings, taking approximately a 50-year life, and (2) machinery and equipment, taking a 15-year life.

A reasonable rate for depreciation is dependent not only on the prospective useful life of the property when acquired, but also on the particular conditions under which the property is used and the accounting policy followed with respect to repairs, maintenance, replacements, and charges to the capital asset account and to the depreciation reserve. The probable useful lives shown here are set with due regard to a reasonable expense policy as to the cost of repairs and replacements. These years of life include an allowance for normal obsolescence.

The method of apportionment called *straight-line* is the most acceptable one for general use. In this method the cost of the property, minus its estimated salvage value, is deducted in equal annual installments over the period of its estimated useful life. The estimated useful life is subject to modification in the light of conditions known to exist at the end of each taxable period (calendar year for most farmers).

*Average useful life (years<sup>1</sup>)*

Animals:		Loaders, hay and seed.....	10
Cattle, breeding or dairy.....	8	Milking machines.....	20
Goats, breeding.....	5	Mowers:	
Hogs, breeding.....	5	Farm.....	14
Horses, breeding or work.....	10	Lawn.....	8
Mules, work.....	10	Planters.....	15
Sheep, breeding.....	5	Plows.....	15
Binders:		Press, hay, baling.....	12
Corn.....	12	Pullers, beet.....	18
Grain.....	14	Pullers and grubbers, stump.....	20
Bins.....	20	Racks, feed.....	10
Boilers.....	20	Refrigerators, electric.....	15
Cables.....	8	Saddles.....	10
Canals, steel and concrete.....	50	Scales, truck or wagon.....	25
Carriers:		Seeders, all types.....	18
Feed.....	20	Separators, cream or grain.....	15
Hay.....	25	Setters, plant.....	12
Litter.....	5	Shellers, corn.....	20
Cisterns.....	33	Shredders.....	15
Cleaners and graders.....	15	Silos:	
Corn cribs.....	30	Concrete.....	50
Crushers, corn and cob.....	15	Metal.....	25
Cultivators.....	15	Wooden.....	20
Cutters, feed.....	12	Sleds and sleighs.....	15
Diggers, potato.....	15	Sowers:	
Distributors, fertilizer.....	12	Grain, broadcast.....	15
Drills, grain.....	15	Lime.....	8
Elevator machinery, grain.....	18	Sprayers.....	15
Elevator and wagon dump, grain.....	12	Spreaders, manure.....	15
Engines:		Stackers, hay.....	20
Gasoline.....	10	Tanks:	
Diesel.....	15	Grain:	
Stationary, steam.....	20	Concrete.....	50
Tractor, steam.....	20	Metal.....	25
Fence posts, steel.....	30	Wagon.....	10
Fences:		Water:	
Snow.....	8	Steel.....	40
Wood.....	15	Wood.....	20
Fencing, woven wire.....	15	Watering.....	20
Furrow openers, disk.....	15	Threshing machines.....	15
Gates, farm.....	15	Tractors.....	10
Grinders, grain and feed.....	15	Wagon beds and racks.....	6
Harness.....	7	Wagon gear, wood wheels.....	12
Harrows.....	15	Wagons:	
Harvesters, grain.....	15	Light.....	12
Headers.....	15	Trucking, heavy duty.....	10
Hoists and forks, hay.....	12	Windmills.....	20
Incubators and brooders.....	15		

<sup>1</sup> Though these figures are whole numbers, fractions of years may be used. Normal obsolescence has been allowed for in these estimates.

Land is not depreciable.

Owner's dwelling does not enter into the depreciation schedule for the farm business in Federal income-tax returns.

Depreciation should be taken every year. It cannot be taken in advance or "made up" later on. In figuring the profit on depreciable property that is sold, the depreciation allowable to date of sale will be deducted from the cost even if part or all of it was unclaimed in earlier years.



